DOCUMENT RESUME

ED 325 490 TM 015 701

AUTHOR Hiatt, Diana Buell; Sandeen, Cecile
TITLE Teacher Utilization of Cooperative Learning Principles.
PUB DATE Apr 90
NOTE 43p.; Paper presented at the Annual Meeting of the American Educational Research Association (Boston, MA, April 16-20, 1990).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Accountability; *Classroom Techniques; *Cooperative Learning; *Elementary School Teachers; Elementary Secondary Education; *Inservice Teacher Education; Interpersonal Competence; Interviews; *Secondary School Teachers; *Teacher Attitudes; Teaching Methods
IDENTIFIERS *Stages of Concern Questionnaire

ABSTRACT

To determine teachers' reasons for implementing cooperative learning, a study involving classroom observation, teacher interviews, and the use of the Stages of Concern Questionnaire (SCQ) was undertaken. Subjects included eight elementary school teachers and seven secondary school teachers. Each teacher's class contained about 30 students. The study extended over one full 90-day semester. Teachers from three school districts involved in the study received 18 or more hours of training in cooperative learning principles prior to the study, and supplementary support during the study. Four classroom observations, extending 30 to 60 minutes each, were made of each teacher during one semester. Teachers were interviewed based on a guide form for 10 minutes after each observation session. Teachers completed the SCQ after the last interview. Results are provided relevant to grouping structure, duration of cooperative lessons, interdependence and accountability strategies, processing strategies, monitoring procedures, cognitive complexity, social skills, and teacher supports and constraints. Results indicate that across-the-board training programs in cooperative learning are useful for teachers at all grade levels and that a focus on social skills is particularly pertinent to teacher training. The teacher observation form; the teacher interview; profiles of the elementary schools, secondary schools, and elementary and secondary schools combined; and recommendations for administrators in the three school districts are included. (TJH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED325490

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Diana Buell Hiatt
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Teacher Utilization of Cooperative Learning Principles

Diana Buell Hiatt, Ed. D.
Pepperdine University
Graduate School of Education and Psychology
400 Corporate Pointe
Culver City, California, 90230

and

Cecile Sandeen, Ed. D.
The Center for the Teaching of Thinking
Project Start Smart
21412 Magnolia
Huntington Beach, California, 92646

A paper presented at the American Educational Research Association Annual Meeting, Boston, Massachusetts, April 16-20, 1990

TM015701

Purposes of the Study

The purposes of this study were to determine how and why teachers implemented cooperative learning in their classrooms; to determine what cooperative strategies were selected by teachers; to determine the reasons for those selections reported by teachers; to determine what teachers perceived as supports or constraints to implementation; to determine their perceptions of strengths or weakness of cooperative learning; and to determine their stages of concern regarding cooperative learning as an innovation.

Methodology

Multiple methods were used as a means to ascertain reality from the vantage of three methodologies: observation, teacher interview, and the use of a standardized instrument, Stages of Concern Questionnaire. An investigator-designed teacher observation form (Appendix A) was used to tally teacher behaviors observed during cooperative learning lessons. A teacher interview form, investigator-designed (Appendix B), was part of the study and was used to document data regarding cooperative learning. Validity was established by a panel of experts. The instruments were developed and refined by reviewing existing literature on cooperative learning. Content validity was assessed by asking the panel of nationally recognized educational professionals on cooperative learning to evaluate the document. The panel consisted of educators with cooperative learning knowledge from a range of organizational positions, all having had classroom experience. The panel included experts from the state, county and district levels. The validity of the Stages of Concern instrument has been previously demonstrated by Hall and George, authors of the test.

Four classroom observations of 30 to 60 minutes each were made of each teacher during a semester to determine which cooperative learning principles were being employed during cooperative lessons. An observation form (Appendix A) was used to record time, social skills level, nature of the academic task, and principles of cooperative learning observed in practice.

One highly trained person observed all 60 cooperative lessons. The observer was a trainer with experience in cooperative learning and observation, including training at The Center for Cooperative Learning at the University of Minnesota. Prior to actual classroom observations, the observer was trained with the teacher observation form using video tapes of classroom cooperative lessons. Inter-rater agreement of 90 percent between this observer and two previously trained observers was reached before actual observations for the study occurred and rated periodically during the study. This level of inter-rater agreement was maintained throughout the study. This was determined by recording lessons on videotape and having this observer and the other two observers view the lessons, rate the lessons, and compute the percentage of times they agreed.

Teachers were interviewed for ten minutes by the observer following each observation session. The teacher interview form (Appendix B) was used to guide the interview. The researcher asked questions without probing or listing categories and recorded the responses of the teachers on the form. No evaluative feedback or comments were offered. If teachers had questions or concerns, they were encouraged to discuss them at the monthly network meetings. Teachers completed the Stages of Concern Questionnaire, following the last interview.

The study extended over one full semester which included 90 instructional days. Teachers received comprehensive training--18 or more hours of staff development on cooperative learning principles--prior to the study and supplementary support during the study. Such supplementary support was provided at the request of the teacher.

All teachers with 18 or more hours of training from three school districts were personally invited by the researchers to participate in the study. The sample included 15 teachers who volunteered to join the study from that pool and represented grade levels K-12 and different content areas at the secondary level. There were eight elementary and seven secondary teachers. Each teacher's class contained approximately 30 students, assigned in the normal manner of the districts.

Findings

Findings by category, frequency and percent for the observation items and interview responses are summarized for elementary teachers in Appendix C and secondary teachers in Appendix D. Appendix E is a profile summarizing all the teachers in this study.

Grouping Structure

For purposes of this study, grouping structure is limited to the size of the group. Generally in cooperative group formation, the structure is addressed through the degree of heterogeneity, size, or actual physical configuration, but in this study structure was limited to the size of the group. The subjects in this study limited their comments to the size of the groups. The findings of the study showed that the most frequent group size selected was four. This supports Spencer Kagan's (1987) recommendations that groups of four offer more flexibility during the lesson. With a group of four, teachers were able to restructure and use partners, which allows for simultaneous activity and flexibility during the lessons. One example is an adult English as a Second Language (ESL) teacher, who used partners assembling sentences with a specific list of words. When all sentences were complete, the partners formed groups of four with another pair and checked each other's work.

Time

Time as defined in this study is the duration of a cooperative lesson on a given day. The most frequent time frame selected for cooperative lessons was 16-30 minutes. High school teachers in this study chose a longer period, 31-45 minutes. This was the only variable which differentiated K-8 from 9-12 teachers. There is no research literature concerning the time selections. It seems reasonable to speculate that high school teachers tend to use the entire period for an instructional method. The entire period in this study is 55 minutes; and the high school teachers used 45 of those minutes for the

cooperative lesson. Some high school teachers indicated that they would use more time if they had more time.

Developmental attention span could also be a consideration. The attention span of high school students is longer, and some high school teachers indicated that they would use more time if they had more time. As an example, in one high school English class, the teacher could have had the students read an entire scene from a play and complete a cooperative exercise. The teacher needed to split the lesson into segments to fit the imposed class period. She had the students read the scene as homework and used the class period for the lesson. However, elementary students have a shorter attention span; and, therefore, a fourth grade teacher needed to create several consecutive lessons in the reconstruction of the events of the Civil War. In one lesson, students generated the events and built a class time-line. Groups then selected one of the events and during the next lesson created a script for the event. The event was acted out for the class. Several class sessions followed with the construction of a newspaper of the period reporting on the events. None of her cooperative lessons lasted longer than 30 minutes, even though the entire unit included several sessions.

Interdependence and Accountability Strategies

Interdependence is defined in this study as that element which requires every team member's leadership, participation and cooperation in order for a task to be completed successfully. Interdependence is promoted when the teacher limits resources. For example, if the teacher gives one piece of paper to a group of students, they must share. If the teacher assigns roles, the groups become interdependent because one person cannot do all the work. For example, the teacher has the class "number off" from one to four. The teacher requests that the number ones do three questions, number twos do three others, and so forth until all the questions in the unit are assigned. Using this procedure for a given assignment, the group becomes interdependent as the members are responsible for different parts but the group is responsible for the total assignment.

Teachers in this study chose limited resources most frequently as a strategy for structuring interdependence. This finding is consistent with the Johnson's (1975) research. When the teacher forced a limit on resources, the group was encouraged to share the materials and work together. This finding is also congruent with the accountability structure most frequently chosen by teachers, namely group product. Because a group product was required for group accountibility, the sharing of roles or materials promoted interdependence at the same time meeting the accountability goal of the group product. It appeared that teachers selected group product most frequently for accountability so that students must work together on a task. A primary example is a second grade teacher who assigned one color dot to each student. Students then generated patterns by contributing their own color. A high school English teacher limited the resources to word lists. Each student was assigned two words and generated the core concepts supported by an illustration or gesture. When combined in groups, each group then had a total of eight to share with the class.

Another high school English teacher used cooperative learning to support accountability when completing a unit. Students were given an assignment to make up quality questions, which were submitted and evaluated for quality and style of question. The teacher then marked the two best questions per student with specific reasons for the selection. Those two questions were then transposed to small tickets and placed in a basket for drawing. Partners then drew out tickets and selected one of the questions, studied it and generated an answer. These partners took the "hot seat" and answered the question. The class then probed them for evidence. Students were able to receive support from their partners and were accountable to each other as they shared a grade on their answers. The observer found high levels of involvement, support and motivation in this classroom.

Processing Strategies

Processing in this study is defined as the debriefing or reflection of the entire lesson including the social interaction and academic skill attainment. Processing may include analysis, evaluation or goal setting. Strategies for processing cooperatively include the teacher processing with the entire class,

the teacher processing with small groups, groups processing by themselves within their groups, or students processing individually. Processing can be oral or written. The results of the study indicated that class discussion was the most frequent choice of teachers as a processing strategy. Another interesting finding is that teachers moved from discussion to one-to-one teacher-student interaction during this portion of the lesson. Teachers asked processing questions and responded to students with hands raised, individually, rather then using reporters or encouraging group discussion and processing in small groups.

No research is available regarding processing strategies selected by teachers. An assumption is made that this method was chosen due to their training. Because the teachers' Stages of Concern did not reflect management concerns, it is assumed that the teachers believed they should process in this manner. They may not have been aware of other possibilities. Even though the findings show that the teachers did include processing at the end of lessons, these teachers did not display a broad range of strategies in their choices.

Monitoring Procedures

Monitoring is an especially important role of the teachers during cooperative lessons. When the teacher monitors, he/she facilitates and supports group functioning by maintaining noise levels which allow for multiple groups to function, by observing decision-making and by promoting on-task student behaviors. If students are leaving the group, or shouting at each other, the teacher needs to take appropriate action. Intervening with guiding questioning with the group in question is one choice, or stopping the entire class for a process check is another possible choice. The teacher needs to determine when to intervene, and when intervening becomes an interference with the cooperative process.

Observation of group process is another function of monitoring with observations reported to the class during processing or used by the teacher for planning the next lesson or collaborative step. Monitoring can occur through teacher observation of the entire class or through the observation and

feedback with one or two groups. Monitoring can also be accomplished with the use of student monitors monitoring their group, or students can be assigned roles for self monitoring. Results of this study show that the teachers most frequently circulated throughout the class as a monitoring procedure. Teachers were observed walking around the room. Periodically, they stopped and questioned groups, or gave directive comments regarding behavior. This is an encouraging finding and is related to the TESA research on proximity and time on task. Proximity is supportive to time on task which, in turn, has positive effects on achievement. This reflects a major teacher behavioral change, especially when such a high K-12 selection was observed. As with processing strategies, teachers may not have been aware of other choices, such as meeting with individual groups or working away from the students. The observed range of monitoring procedures was limited. This could also be a limitation of the training.

Cognitive Complexity

In this study cognitive complexity is the level of difficulty of the lesson and is based on Bloom's taxonomy of educational objectives (B.Bloom, 1956). The levels move through knowledge to comprehension, to application, to analysis, to synthesis, and evaluation. The results indicate that application was the most frequent cognitive level selected. For example, a fourth grade class moved through brainstorming examples of events occuring the Civil War and then acted them out. Finally, they reported these events in a "Civil War" newspaper. The objective for the lesson was the reporting mode of writing. This is consistent with Slavin's (1984) research regarding cognitive and social skills congruency. He found that lower social skills were present when higher cognitive skills were selected and visa versa. In this study, teachers also selected lower social skills.

Social Skills

This study used Johnson & Johnson's (1975) levels of social skills which include forming, functioning, formulating, and fermenting as levels of group functioning. Forming skills are group management skills such as moving without noise, staying with the group, the use of quiet voices, the

use of names, and encouragement. Functioning skills include the expression of support, asking for help or clarification, explanations, paraphrasing, and descriptions of feelings. Formulating includes summarizing, seeking elaboration, seeking accuracy through correction or the request for vocalization and planning. Fermenting extends to integrating ideas into a single position, requesting justification, extending other's answers, probing, checking, criticizing ideas, not people.

The results in this study indicated that teachers did not focus on social skills. However, social skills were recognized as by-products of cooperative learning. These skills were modeled in training and therefore appeared to be transferred to lesson implementation. This finding is supportive of the Johnsons' (1975) research which indicates that teachers do not focus on social skills, perhaps due to lack of training. The Johnson research indicated that higher level social skills promote controversy and confrontation. When controversy is kept at lower levels, motivation may also be diminished. Teachers in this study did not reflect an awareness of this implication. Again, this may reflect a limitation of their training which did not model higher levels of social skills. Teachers were taught about the skills but were not required to practice them.

Reasons Reported for Size and Time

No data is available regarding the reasons reported by teachers for group size and length of time for cooperative lessons as these questions were not asked.

Reasons Reported for Accountability

Teachers reported the complexity of the task as their most frequent reason for selection of group products for accountability. By complexity of the task, they were referring to a chain of events such as researching, synthesizing, writing, editing, and proofing. Each event included group decisions as well as individual. The teachers were interested in the final product of each group because it was an integration of all activities. This was congruent with observations of interdependence structures. However,

teachers were quite limited in their explanations regarding their selections. This limitation might have been related to the way the questions were asked or a reflection of limitation in teacher training and their understanding. Some teachers responded it would be incongruous to structure accountability any other way. Some teachers reported that activities had been centered upon group production; therefore these teachers felt that group products were a natural accountability measure for the lesson.

Reasons Reported for Interdependence Strategies

In this study, compatibility with the task was most frequently reported as the reason for selecting interdependence strategies. For example, when second graders were developing patterns in math lessons, the teacher limited the colors and assigned one color per student. Each student was then required to cooperate with the partner in order to produce a pattern with the desired number of colors. This is congruent with teacher choices of accountability. Perhaps the selection of cooperative learning as the instructional methodology was based upon this type of task.

Reasons Reported for Processing Strategies

Teachers in this study most frequently reported that task completion was their primary reason for selection of processing strategies for cooperative lessons. It appeared that teachers were referring to task completion as closure for their lesson plan. The researcher did not observe the teachers offering instruction regarding the processing of group interaction or the meeting of academic criteria.

There was not, however, a clear understanding of the purpose for processing communicated to the researcher. Most teachers did not appear to be aware of the levels of processing, for example analysis, evaluation, or goal setting and there was little transfer for future learning observed. This finding could reflect a limitation in their training as teachers were aware of the need to include processing. They were very consistent in their reports, K - 12. However, they selected teacher processing with the whole class across all lessons and grade levels.

Reasons Reported for Monitoring Procedures

In this study, 85 % of the teachers selected the same monitoring procedure, namely, circulating around the room and supervising the students; however, only 23% reported the same rationale for selecting this monitoring procedure. These 23 % reported their reasons for monitoring procedures as being related to individual social skill levels. The other reasons reported for selecting monitoring procedures ranged from 10 to 13%. This was not a strong finding. It is interesting to note however, that the monitoring procedure selected was very consistent. This finding could reflect a limitation in the training or the teacher's use of a traditional habit, not related to cooperative learning as an innovation. They may have used a past monitoring strategy and thus did not report rationale related to cooperative learning.

Reasons Reported for Cognitive Complexity

Teachers in this study most frequently reported that the content of the lesson was the reason for the cognitive skill level in their lesson. This supports Slavin's (1982) curricular approach to cooperative learning in which he states that the curriculum is the driving force in the selection of cooperative learning as a methodology.

Reasons Reported for Social Skills

Teachers in this study reported individual social skills as their reason for selection rather than generalizing to group or class social skill levels. If there were several students who had difficulty moving about the room quietly and productively, the teachers would select activities which required no movement, rather than to select activities requiring movement. Teachers could have selected activities requiring instruction in moving efficiently and used the cooperative lesson as practice They chose not to introduce new social skills in their cooperative lessons. Notably, there was a great deal of variance in their answers regarding rationale for selection. Some stated they did not teach or monitor social skills but were more concerned with the

academic task. From the responses given, there appears to be a low level of understanding about social skills and their relationship to group functioning. This may reflect a limitation in the training.

Teacher Reported Supports and Constraints

The two most important issues reported by teachers were preparation time and materials. Both were viewed as either supportive or constraining. If preparation time was available, it was viewed as supportive; if not, it could be constraining. The same was true with materials. Teachers reported that, if they were well prepared with ample material or carefully structured material, they could handle lessons. If the materials were not well structured, cooperative lessons could become very difficult to successfully carry out.

This finding is supported by Kagan's and Slavin's research (Johnson, 1985). Kagan emphasizes the need for teacher skills in simple structures (in depth training and planning) which allows for restructuring or processing the lessons in progress, teacher decisions made based upon time limitations and student interest Slavin's research indicates that the teacher's utilization of appropriate curricular materials will carry the cooperative lesson and require the cooperative processes among the students.

High school teachers also reported that they considered implementation time to be a constraint. This is related to the length of time required to complete a lesson. High school teachers are limited by the structure of the school day and often have only one class period available. This is considered an organizational structuring issue.

Teacher Reported Strengths and Weaknesses

Student achievement was most frequently reported as a strength of cooperative learning. Increases in the quality and depth of understanding were noted by teachers. Student concern with other outcomes besides grades was also mentioned. Teachers stated that cooperative learning made teaching and learning fun. It allowed them to know students more personally, to interact with the groups, and to provide more opportunities for individual

interests and needs. The use of cooperative learning reduced the need for external disciplinary controls and promoted a problem solving approach. Several teachers mentioned that cooperative learning has renewed their commitment to teaching as a professional and had stimulated a new interest in the classroom. These comments are especially relevant to teacher retention in the profession.

Teachers in this study reported that implementation of cooperative learning was difficult whenever groups were interacting at different social and academic levels. This was expressed in connection with the need for preparation time as a support. If problems occurred, teachers expressed frustration at knowing how to intervene and promote positive solutions. This relates to Kagan's notion of simple structures. He states that simple structures can be used as an intervention to restructure and allow the groups to examine their functioning and, thus, make even dysfunctional group behavior become a positive learning experience. For example, if a group has a member who is not taking turns and is doing most of the talking, the teacher can intervene with the class and suggest the use of "talking chips". With talking chips, students are given a limited number of chips. Each student deposits a chip when talking. After the chips are used, that student is not permitted to talk until each student has used their chips. Then, all can take the chips and start over. If such an intervention is used, it should be processed in order to clarify the different effect upon the group.

Results which were not directly sought, but which were found as a by-product of the research, included concerns with administrative support and parental understanding. Several subjects also expressed concerns regarding administrative understanding of cooperative learning. They were concerned about implementation when there was no assurance that administration clearly understood the principles involved. In addition, many were unsure about how to respond to parents with concerns regarding cooperative learning.

The enjoyment and fun of cooperative learning was expressed by many teachers. Several felt cooperative learning brought renewed enthusiasm to

learning and improved communication among students as obviously important benefits.

Teachers commented that the teacher interview affected their reflection upon teaching even though there was no feedback offered. Many said the interview had a positive effect on their planning.

Stages of Concern

When reporting the results of the Stages of Concern Questionnaire, it was noted that a high intensity of concern was found at the information stage. This was inconsistent with the levels of training and experience of this group of teachers. Shirley Hord, one of the original researchers with the instrument, was consulted. She suggested that the information stage should be ignored when interpreting this group's responses. The information stage has been found to be unusually high with high users, as they are interested in gaining any information and are not seeking initial information. Therefore, this intensity does not reflect the intent of the questionnaire. As such, it was not used in the analysis of this group of subjects.

The two peaks of concern consistently reflected by this group were consequence and collaboration. An upswing curve toward collaboration indicated growth in the adoption process. The interpretation for this group is that there is interest in the effect of cooperative learning on student achievement and there is even greater interest in collaborating with peers about implementation. Teachers easily made choices and were not struggling with implementation. There was little concern expressed regarding management of cooperative learning on the Stages of Concern Questionnaire. This group expressed concern with the consequences for students. This is consistent with the concerns expressed when asked to explain reasons for their choices of strategies.

The Stages of Concern instrument does produce a profile for the group, but it is best used to examine each individual. It is not an instrument to be used for generalization, because each individual is at his/her own stage of concern regarding the innovation. The information is especially useful to the staff developers working with individuals within the group.

Conclusions

When reviewing findings of research question one, which reported observations of the strategies teachers selected, it can be concluded that teachers in this study selected a narrow range of cooperative strategies when implementing cooperative lessons. All K-12 teachers displayed a consistent pattern in their selection of cooperative strategies, the only difference being the length of time for lesson implementation between elementary and secondary teachers. Secondary teachers were observed delivering longer lessons.

A conclusion drawn is that all K-12 teachers do successfully implement cooperative learning. However, the narrow range of strategies selected by teachers indicates a need for additional training or support in order to broaden the range of observed strategies. The teachers in this study focused more on academics than social skills which indicates that they are possibly traditionally curriculum driven.

Though the teachers appeared skilled in the management of cooperative learning lessons, classroom observations indicated that they did not select higher levels of social skills for their lessons. Two conclusions can be drawn. Because there could be a lack of teachers' understanding regarding the importance of social skill development or their lack of skills in implementation strategies, one conclusion is that teachers should receive further training in order to implement higher levels of social skills in the classroom. A second conclusion is related to Slavin's discussion regarding the matching of cognitive and social skills. He suggests that when selecting higher cognitive skills, less social structure is desired. Therefore, it could be concluded that these teachers were basing their selections on an understanding of that relationship. However, there was no reporting of this relationship by teachers so the first conclusion seems more plausible.

The above suggest that teachers did not perceive the connection between academic learning and social skills training. The major rationale offered for selecting cooperative learning as the instructional strategy for a

given lesson was content. These teachers did not report the use of cooperative learning to develop social skills. Conclusions drawn regarding these findings indicate the academic curriculum as the focus of most teachers. The social skills acquired were a by-product of and incidental to the cooperative lesson. This supports Slavin's suggestions that curriculum be provided which suggests the appropriate cooperative strategies to support cooperative learning implementation.

An additional conclusion is that, due to the lack of insight reported regarding social skill development, there is a need to create a disequilibrium regarding the consequences on students and strategies selected. Perhaps a collaborative network could focus on the consequences, thus responding to stages of concern of the teachers in this study.

Teachers reported the lack of planning as a constraint to implementation. If lessons were not well planned, they found difficulty in intervening. Beyond the obvious conclusion that time be provided and managed, the repertoire of interventions should be expanded. Spencer Kagan's suggestions regarding a large repertoire of simple structures appears to be an appropriate area of focus. If teachers were equipped with a wider range of cooperative strategies, group dynamics would not be as constraining nor require as much pre-planning time. A conclusion drawn is the need for further training in simple structures so that teachers have a sense of mastery of these as a foundation for acquiring other cooperative learning techniques.

A final conclusion is that the use of an interview instrument would be supportive when used with peers. Teachers stated that just being asked questions about their decisions caused them to reflect upon their decisions. Because the instrument used in this study was not evaluative, it would not require supervision and could be used by teachers in a peer coaching approach.

When examining the findings regarding research question three, which focused upon teachers perceptions of the strengths and weaknesses, and supports and constraints, one conclusion is that the institutional structure has a direct influence on implementation. High school teachers

expressed a concern regarding the need to plan together. Restructuring school time use is a direct implication.

Teachers in this study expressed a practical focus on curriculum as the basis for decision-making. They reported that materials were both a constraint to the development of lesson or a reason to select a given lesson. When enough materials were present and organized, lessons went well; when not, implementation was difficult. Also, they demonstrated ease in the use of cooperative learning for aligning lessons with the state curricular guidelines. This finding indicates that cooperative learning does align with the current curriculum guides and, therefore, is an instructional strategy which promotes and does not interfere with state aims.

An additional conclusion is that because of the lack of insight reported by teachers regarding social skill development, there is a need to create within these teachers additional attention to social skill development of their students. One suggestion is to create within these teachers a sense of disequilibrium by having them focus on the consequences of their instructional selections on student outcomes. Then a discussion among teachers could be initiated on what they perceived were student outcomes of cooperative lessons. Perhaps such a collaborative networking approach would assist teachers to focus on the consequences of their instructional decision-making and expand their understanding of the application of cooperative learning to a wider range of instructional options. Such a staff development approach would respond to the higher level stages of concern of these teachers as previously indicated in this study.

An examination of the teachers' stages of concern revealed the findings were consistent with their practice. They did not report concern with management and the observations supported that they were proficient in the strategies they selected. The teachers ability to implement and utilize methodology demonstrates a direct relationship with the quality of training and peer support. There was an expressed comfort level by teachers, yet they applied the methodology at the mechanical level. The implication is for teachers to use their comfort level as a springboard for the next level of staff development.

Recommendations

The results suggest several recommendations. The data suggest that across the board training programs in cooperative learning are useful for all grade levels. The teachers seem to acquire the same information on implementation. Staff development in cooperative learning at all grade levels seems to be appropriate. The findings suggest that teachers did not focus on social skills but rather on academic skills. This suggests that, in staff development, more emphasis be placed on the relationship of social skills with academics. The addition of theory regarding the impact of high level social skills on academics would be beneficial. The data also suggest a need for teachers to learn more simple structures, so that they can be more flexible during lesson implementation. Knowledge of a wide range of interventions would facilitate the preparation and implementation of cooperative lessons.

Since the data also suggest a need for teachers to learn a larger repertoire of simple structures, an advanced level of cooperative learning should be created for staff development. Armed with a broader knowledge, teachers can be more flexible and have more options available during lesson implementation. Knowledge of a wide range of interventions would facilitate the preparation and implementation of cooperative lessons.

Finally, the findings indicate that this advanced training should delineate and focus on social skills. More advanced training in the implications of group creativity, group problem solving, and constructive controversy upon academic success should be included.

Administrators should be encouraged to provide support for cooperative learning, including providing resources for parent education. Parent education workshops should be developed so that teachers are relieved of the burden of defending the implementation of innovative instructional practices. Recommendations for the administrators in the three districts in this study are reported in Appendix F.

When examining teacher expressed concerns regarding cooperative learning, the use of a collaborative network would be welcomed by teachers.

Because this group has expressed concerns regarding the consequences of cooperative learning on the student, student outcomes should be the focus of the collaborative sessions. Specific simple structures and social skills can be introduced, lessons prepared collaboratively, and the effects reflected upon. This process addresses the expressed concerns for student outcomes and collaboration with peers.

The plan for the support group should include collaborative preparation time and the production of sample lessons. This will address the perceived constraints of the need for preparation time and materials. Further, the use of curricular frameworks when planning lessons needs to be encouraged. Collaborative sessions should address simple structures with a brief introduction and review of each structure. The sharing of implementation ideas for curricular alignment should be generated. The collaborative planning of lessons should conclude each session. The teachers can practice in their classrooms and return to the network to share outcomes. The Teacher Interview Form should be used as a collaborative tool for peers to use as a basis for reflective teaching.

Suggestions for Further Research

Several recommendations may be formulated regarding future research in regard to this study. The first point that may be noted is that the sample size used in this study was small (n=15). The use of the small sample coupled with the fact that all subjects were volunteers means that the findings are representative of a select group. It is therefore recommended that future investigators wishing to replicate this study do so using a larger sample size and, if possible, a non-volunteer subject group.

Another recommendation for future research concerns the fact that the teachers in this study were required to have only 18 hours of training. It was noted that this short amount of training and/or the use of training procedures based on one model of cooperative learning may have been responsible for certain teacher decisions. Thus, in order to examine implementation patterns more fully in replications of this study, it is

recommended that future researchers provide subjects with longer training periods and perhaps more than one model of cooperative learning.

This study investigated a variety of variables attendant to implementation of cooperative learning strategies. Any one of these variables could be examined in more depth in future studies; and an in-depth examination of variables such as teachers' concerns or perceptions of strengths and weaknesses would increase the understanding of these factors. Therefore, it is recommended that future investigators design studies aimed at a more thorough investigation of any one or more of the variables explored in this research.

It is recommended that further examination of classroom implementation of cooperative learning be pursued with the addition of a set of criteria for goodness in teaching. This study did not include such a set nor a request that teachers describe what is good teaching. Thus, there was no basis on which teachers' response could be judged against a common standard or each teacher's standard of good teaching. This study assumed their decisions to select various principles of cooperative learning for a given lesson was based on good teaching practice. However, since the teachers tended to select the same principles for most lessons, their selections may have been based on ease or covenience of implementation not what these teachers believe would be the best choices for a given lesson.

Appendix A

TEACHER OBSERVATION FORM

OBSERVER #_____
TEACHER #_____
OBSERVATION #_____
DATE _____

1. TIME FRAME : BEGINS_____ ENDS_____ MINUTES _____
2. ACADEMIC TASK _____
3. COGNITIVE LEVEL:

(knowledge)____
(comprehension)____
(application)____
(analysis) ____
(synthesis)____
(evaluation)____

PRINCIPLES OF COOPERATIVE LEARNING:

4. SOCIAL SKILL _____

SOCIAL LEVEL:

(forming)____
(functioning)____
(formulating)____
(fermenting)____

---

5. INTERDEPENDENCE:

(roles)_____
(task)_____
(resource) _____
(reward) _____

---

6. STRUCTURE _____

GROUP SIZE:

(2)____

(3) ____

(4)____

(5) ____

(6+)____

---

7. ACCOUNTABILITY:

(individual) _____

(total group) _____

(group product) _____

(random group) _____

(improvement scoring) _____

---

8. PROCESSING:

(class discussion)_____

(group discussion) _____

(group check sheet) _____

(individual check sheet) _____

---

9. TEACHER MONITORING:

(circulate class) _____

(focus 1 -2 groups) _____

(desk work) _____

(intervene) _____

(interfere) _____

NOTES _____

_____

Appendix B

TEACHER INTERVIEW

OBSERVER # _____

TEACHER # _____

OBSERVATION #____

DATE_____

1. What grouping structure did you assign? _____

   Group Size:

   2 _____

   3 _____

   4 _____

   5 _____

   6+ _____

---

2. What was the social skill for this lesson?

   Forming _____

   Functioning _____

   Formulating _____

   Fermenting _____

---

3. How/why did you select this skill?

   Classroom management _____

   Time _____

   Class skills _____

   Compatibility with task _____

   Individual student skill _____

   Feedback/tracking _____

---

4. How did you structure interdependence?

Roles _____

Task _____

Resource _____

Reward _____

---

5. How/why did you select this method?

Classroom management _____

Time _____

Class skills _____

Feedback _____

Compatibility with task _____

Individual student skill _____

---

6. What was the academic task for this lesson?

_____

---

7. What was the cognitive level for this lesson?

Knowledge _____

Comprehension _____

Application _____

Analysis _____

Synthesis _____

Evaluation _____

---

8. How/why did you decide upon this level?

Classroom management _____

Time _____

Class skills _____

Content area _____

Individual skills _____

Textbook _____

---

9. What was the accountability method in this lesson?

Individual _____

Total group _____

Group product _____

Random group _____

Improvement scoring _____

---

10. How/why did you select this method?

Time _____

Social skill _____

Cognitive complexity _____

Data magement _____

---

11. How was this lesson processed?

Class discussion _____

Group discussion _____

Group check sheet _____

Individual check sheet _____

---

12. How/why did you decide upon this process?

Time _____

Task completion _____

Social skill _____

Record keeping _____

---

13. How did you monitor ?

Circulate class _____

Focus 1-2 groups _____

Desk work _____

Intervene _____

Interfere _____

Desk work _____

---

14. How/why did you select this method?

Social level _____

Academic task _____

Record keeping _____

Work load _____

Age of students _____

---

15. What were the supports for today's lesson?

Planning time _____

Materials _____

Facilities _____

Feedback _____

Staff support _____

---

16. What were the constraints for today's lesson?

Planning time _____

Materials _____

Facilities _____

Feedback _____

Staff support _____

---

17. What do you believe are the strengths of cooperative learning?

Social Skills _____

Lesson Preparation _____

Classroom Management _____

Student Achievement _____

Lesson Implementation _____

---

18. What do you believe are the weaknesses of cooperative learning?

Social Skills _____

Lesson Preparation _____

Classroom Management _____

Student Achievement _____

Lesson Implementation _____

Appendix C

Elementary Profile

Frequency and Percent Within Four Lessons

Observation Form

Question	Category	Frequency	Percent
1. Time Devoted to C.L. Lessons	1 to 15 Min.	1	3.12
	16 to 30 Min.	19	59.37
	31 to 45 Min.	7	21.87
	46 to 60 Min.	5	15.62
2. Academic task for each lesson was different, therefore not tallied.			
3. Cognitive Complexity Level Selected	Knowledge	2	6.25
	Comprehension	3	9.37
	Application	7	21.87
	Analysis	8	25
	Synthesis	10	31.25
	Evaluation	2	6.25
4. Social Skills Selected	Forming	3	9.37
	Functioning	25	78.12
	Formulating	0	0
	Fermenting	0	0
	None Assigned	4	12.5
5. Interdependence Method Selected	Role	3	9.37
	Task	6	18.75
	Resource	18	56.25
	Reward	0	0
	None Present	5	15.62
6. Grouping Structures Selected	Two Members	11	34.37
	Three Members	3	9.37
	Four Members	13	40.62
	Five Members	1	3.12
	Six or More	4	12.5
7. Accountability Method Selected	Individual	7	21.87
	Total Group	3	9.37
	Group Product	19	59.37
	Random in Group	1	3.12
	Improvement Scores	1	3.12
	None Present	1	3.12

7. Processing Strategies Selected	Class Discussion	18	56.25
	Group Discussion	8	25
	Group Check Sheet	2	6.25
	Individual Check Sheet	4	12.5
9. Monitoring Procedures Selected	Circulate Class	28	87.5
	Focus 1 - 2 Groups	2	6.25
	Desk Work	1	3.12
	Other	1	3.12
	None	0	0

Interview Form

Question	Category	Frequency	Percent
1. Reported Structure	Two Members	11	34.37
	Three members	2	6.25
	Four Members	14	43.75
	Five Members	1	3.12
	Six or More	4	12.5
2. Reported Social Skill	Forming	1	3.12
	Functioning	25	78.12
	Formulating	2	6.25
	Fermenting	0	0
	None Present	4	12.5
3. Reasons Reported for Social Skills Selection	Classroom Management	0	0
	Time	0	0
	Class Skills	12	37.5
	Compatibility with Task	7	21.87
	Individual Skills	12	37.5
	Tracking/Feedback	1	3.12
4. Reported Interdependence	Roles	3	9.37
	Task	6	18.75
	Resource	18	56.25
	Reward	0	0
	None Present	5	15.62
5. Reasons Reported for Interdependence Method	Classroom Management	3	9.37
	Time	0	0
	Class Skills	7	21.87
	Feedback	0	0
	Compatibility with Task	15	46.87
	Individual Skill	5	15.62
	Other	2	6.25

6. Academic task for each lesson was different, therefore not tallied.

7. Reported Cognitive Level	Knowledge	2	6.25
	Comprehension	3	9.37
	Application	8	25
	Analysis	10	31.25
	Synthesis	7	21.87
	Evaluation	2	6.25
8. Reasons Reported for Cognitive Complexity Selection	Classroom Management	1	3.12
	Time	0	0
	Class Skills	8	25
	Content Area	17	53.12
	Individual Skills	4	12.5
	Textbook	2	6.25
9. Reported Accountability	Individual	7	21.87
	Total Group	3	9.37
	Group Product	19	59.37
	Random in Group	1	3.12
	Improvement Score	1	3.12
	None Present	1	3.12
10. Reasons Reported for Accountability Method	Time	2	6.25
	Social Skill	5	15.62
	Cognitive Complexity	12	37.5
	Data Management	10	31.25
	Other	3	9.37
11. Reported Processing	Class Discussion	18	56.25
	Group discussion	8	25
	Group Ck Sheet	2	6.25
	Individual Ck Sheet	4	12.5
12. Reasons Reported for Processing Strategies	Time	6	18.75
	Task Completion	16	50
	Social Skills	7	21.87
	Record Keeping	2	6.25
	Other	1	3.12
13. Reported Monitoring	Circulate Class	30	93.75
	Focus 1-2 Groups	0	0
	Desk Work	0	0
	None	0	0
	None	1	3.12
	Other	1	3.12
14. Reasons Reported for Monitoring Procedures	Social Skills	6	18.75
	Academic Task	4	12.5
	Record Keeping	3	9.37
	Work Load	6	18.75
	Age of Students	8	25
	Other	5	15.62

15. Perceived Supports to Implementation	Planning Time	8	25
	Materials	13	40.62
	Facilities	1	3.12
	Feedback	1	3.12
	Staff Support	4	12.5
	Other	5	15.62
16. Perceived Constraints to Implementation	Planning Time	6	18.75
	Materials	11	34.37
	Facilities	3	9.37
	Feedback	2	6.25
	Staff Support	1	3.12
	Other	9	28.12
17. Weaknesses of C.L.	Social Skills	5	15.62
	Lesson Preparation	4	12.5
	Classroom Management	6	18.75
	Student Achievement	5	15.62
	Lesson Implementation	7	21.87
	Other	5	15.62
18. Strengths of C.L.	Social Skills	9	28.12
	Lesson Preparation	0	0
	Classroom Management	1	3.12
	Student Achievement	11	34.37
	Lesson Implementation	5	15.62
	Other	6	18.75

Appendix D

Secondary Profile

Frequency and Percent Within Four Lessons

Observation Form

Question	Category	Frequency	Percent
1. Time Devoted to C.L. Lessons	1 to 15 Min.	1	3.57
	16 to 30 Min.	5	17.85
	31 to 45 Min.	13	46.42
	46 to 60 Min.	9	32.14
2. Academic task for each lesson was different, therefore not tallied.			
3. Cognitive Complexity Level Selected	Knowledge	0	0
	Comprehension	2	7.14
	Application	9	32.14
	Analysis	3	10.71
	Synthesis	8	28.57
	Evaluation	6	21.42
4. Social Skills Selected	Forming	0	0
	Functioning	17	60.71
	Formulating	4	14.28
	Fermenting	0	0
	None Assigned	7	25
5. Interdependence Method Selected	Role	1	3.57
	Task	7	25
	Resource	14	50
	Reward	3	10.71
	None Present	3	10.71
6. Grouping Structures Selected	Two Members	9	32.14
	Three Members	5	17.85
	Four Members	12	42.85
	Five Members	0	0
	Six or More	2	7.14
7. Accountability Method Selected	Individual	8	28.57
	Total Group	2	7.14
	Group Product	16	57.14
	Random in Group	1	3.57
	Improvement Scores	0	0
	None Present	1	3.57

8.	Processing Strategies Selected	Class Discussion	14	50
		Group Discussion	9	32.14
		Group Check Sheet	4	14.28
		Individual Check Sheet	1	3.57
9.	Monitoring Procedures Selected	Circulate Class	23	82.14
		Focus 1 - 2 Groups	5	17.85
		Desk Work	0	0
		Other	0	0
		None	0	0

Interview Form

Question		Category	Frequency	Percent
1.	Reported Structure	Two Members	9	32.14
		Three members	6	21.42
		Four Members	12	42.85
		Five Members	1	3.57
		Six or More	0	0
2.	Reported Social Skill	Forming	0	0
		Functioning	15	53.57
		Formulating	2	7.14
		Fermenting	0	0
		None Present	11	39.28
3.	Reasons Reported for Social Skills Selection	Classroom Management	0	0
		Time	0	0
		Class Skills	12	37.5
		Compatibility with Task	7	21.87
		Individual Skills	12	37.5
		Tracking/Feedback	1	3.12
4.	Reported Interdependence	Roles	1	3.57
		Task	7	25
		Resource	14	50
		Reward	3	10.71
		None Present	3	10.71
5.	Reasons Reported for Interdependence Method	Classroom Management	1	3.57
		Time	2	7.14
		Class Skills	3	10.71
		Feedback	0	0
		Compatibility with Task	13	46.42
		Individual Skill	6	21.42
		Other	3	10.71

6. Academic task for each lesson was different, therefore not tallied.

7.	Reported Cognitive Level	Knowledge	0	0
		Comprehension	3	10.71
		Application	10	35.71
		Analysis	4	14.42
		Synthesis	6	21.42
		Evaluation	5	17.85
8.	Reasons Reported for Cognitive Complexity Selection	Classroom Management	0	0
		Time	1	3.57
		Class Skills	6	21.42
		Content Area	18	64.28
		Individual Skills	3	10.71
		Textbook	0	0
9.	Reported Accountability	Individual	10	35.71
		Total Group	3	10.71
		Group Product	14	50
		Random in Group	0	0
		Improvement Score	0	0
		None Present	1	3.57
10.	Reasons Reported for Accountability Method	Time	4	14.28
		Social Skill	8	28.57
		Cognitive Complexity	9	32.14
		Data Management	3	10.71
		Other	4	14.28
11.	Reported Processing	14	50	
		Group Discussion	9	32.14
		Group Ck Sheet	4	14.28
		Individual Ck Sheet	1	3.57
12.	Reasons Reported for Processing Strategies	Time	2	7.14
		Task Completion	13	46.42
		Social Skills	8	28.57
		Record Keeping	2	7.14
		Other	3	10.71
13.	Reported Monitoring	Circulate Class	25	89.28
		Focus 1-2 Groups	2	7.14
		Desk Work	0	0
		None	0	0
		Other	1	3.57
14.	Reasons Reported for Monitoring Procedures	Social Skills	8	28.57
		Academic Task	7	25
		Record Keeping	3	10.71
		Work Load	5	17.85
		Age of Students	2	7.14
		Other	3	10.71

15.	Perceived Supports to Implementation	Planning Time	7	25
		Materials	13	46.42
		Facilities	3	10.71
		Feedback	3	10.71
		Staff Support	1	3.57
		Other	1	3.57
16.	Perceived Constraints to Implementation	Planning Time	2	7.14
		Materials	6	21.42
		Facilities	3	10.71
		Feedback	4	14.28
		Staff Support	0	0
		Other	13	46.42
17.	Weaknesses of C.L.	Social Skills	3	10.71
		Lesson Preparation	2	7.14
		Classroom Management	2	7.14
		Student Achievement	5	17.85
		Lesson Implementation	11	39.28
		Other	5	17.85
18.	Strengths of C.L.	Social Skills	4	14.28
		Lesson Preparation	2	7.14
		Classroom Management	1	3.57
		Student Achievement	10	35.71
		Lesson Implementation	7	25
		Other	4	14.28

Appendix E

Total Profile

Frequency and Percent Within Four Lessons

Observation Form

Question	Category	Frequency	Percent
1. Time Devoted to C.L. Lessons	1 to 15 Min.	2	3.33
	16 to 30 Min.	24	40
	31 to 45 Min.	20	33.33
	46 to 60 Min.	14	23.33
2. Academic task was different for each lesson, therefore not tallied.			
3. Cognitive Complexity Level Selected	Knowledge	2	3.33
	Comprehension	5	8.33
	Application	16	26.66
	Analysis	11	18.33
	Synthesis	18	30
	Evaluation	8	13.33
4. Social Skills Selected	Forming	3	5
	Functioning	42	70
	Formulating	4	6.66
	Fermenting	0	0
	None Assigned	11	18.33
5. Interdependence Method Selected	Role	10	16.66
	Task	10	16.66
	Resource	28	46.66
	Reward	8	13.33
	None Present	4	6.66
6. Grouping Structures Selected	Two Members	20	33.33
	Three Members	8	13.33
	Four Members	25	41.66
	Five Members	1	1.66
	Six or More	6	10
7. Accountability Method Selected	Individual	15	25
	Total Group	3	5
	Group Product	37	61.66
	Random in Group	3	5
	Improvement Scores	1	1.66
	None Present	1	1.66

8. Processing Strategies Selected	Class Discussion	32	53.33
	Group Discussion	17	28.33
	Group Check Sheet	6	10
	Individual Check Sheet	5	8.33
9. Monitoring Procedures Selected	Circulate Class	51	85
	Focus 1 - 2 Groups	7	11.66
	Desk Work	1	1.66
	Other	1	1.66
	None	0	0

Interview Form

Question	Category	Frequency	Percent
1. Reported Structure	Two Members	20	33.33
	Three Members	8	13.33
	Four Members	26	46.33
	Five Members	2	3.33
	Six or More	4	6.66
2. Reported Social Skill	Forming	1	1.66
	Functioning	40	66.66
	Formulating	4	6.66
	Fermenting	0	0
	None Present	15	25
3. Reasons Reported for Social Skills Selection	Classroom Management	0	0
	Time	3	5
	Class Skills	17	28.33
	Compatibility with Task	17	28.33
	Individual Skills	21	35
	Tracking/Feedback	2	3.33
4. Reported Interdependence	Roles	4	6.66
	Task	13	21.66
	Resource	32	53.33
	Reward	3	5
	None Present	8	13.33
5. Reasons Reported for Interdependence Method	Classroom Management	4	6.66
	Time	2	3.33
	Class Skills	10	16.66
	Feedback	0	0
	Compatibility with Task	28	46.66
	Individual Skill	11	18.33
	Other	5	8.33

7. Reported Cognitive Level	Knowledge	2	3.33
	Cogmprehension	6	10
	Application	18	30
	Analysis	14	23.33
	Synthesis	13	21.66
	Evaluation	7	11.66
8. Reasons Reported for Cognitive Complexity Selection	Classroom Management	1	1.66
	Time	1	1.66
	Class Skills	14	23.33
	Content Area	35	58.33
	Individual Skills	7	11.66
	Textbook	2	3.33
9. Reported Accountability	Individual	17	28.33
	Total Group	6	10
	Group Product	33	55
	Random in Group	1	1.66
	Improvement Score	1	1.66
	None Present	2	3.33
10. Reasons Reported for Accountability Method	Time	6	10
	Social Skill	13	21.66
	Cognitive Complexity	21	35
	Data Management	13	21.66
	Other	7	11.66
11. Reported Processing	Class Discussion	32	53.33
	Group discussion	28.33	
	Group Ck Sheet	6	10
	Individual Ck Sheet	5	8.33
12. Reasons Reported for Processing Strategies	Time	8	13.33
	Task Completion	29	48.33
	Social Skills	15	25
	Record Keeping	4	6.66
	Other	4	6.66
13. Reported Monitoring	Circulate Class	55	91.66
	Focus 1-2 Groups	2	3.33
	Desk Work	0	0
	None	1	1.66
	Other	2	3.33
14. Reasons Reported for Monitoring Procedures	Social Skills	14	23.33
	Academic Task	11	18.33
	Record Keeping	6	10
	Work Load	11	18.33
	Age of Students	10	16.66
	Other	8	13.33

15. Perceived Supports to Implementation	Planning Time	15	25
	Materials	26	43.33
	Facilities	4	6.66
	Feedback	4	6.66
	Staff Support	5	8.33
	Other	6	10
16. Perceived Constraints to Implementation	Planning Time	8	13.33
	Materials	17	28.33
	Facilities	6	10
	Feedback	6	10
	Staff Support	1	1.66
	Other	22	36.66
17. Weaknesses of C.L.	Social Skills	8	13.33
	Lesson Preparation	6	10
	Classroom Management	8	13.33
	Student Achievement	10	16.66
	Lesson Implementation	18	30
	Other	10	16.66
18. Strengths of C.L.	Social Skills	13	21.66
	Lesson Preparation	2	3.33
	Classroom Management	2	3.33
	Student Achievement	21	35
	Lesson Implementation	12	20
	Other	10	16.66

Appendix F

Recommendations for administrators in the three districts should include comprehensive staff development. The specific plan should include:

1. The continuation of basic training in cooperative learning methods for all teachers, K-12.
2. The use of the teacher interview and observation forms for collaborative reflection on instructional decisions. The questioning format as a reflective technique could be used by peers or supervisors to stimulate teacher development.
3. The development of an advanced training which includes simple structures and higher social skills for collaborative sessions. Specific structures or social skills could be reviewed, practiced, and reflected upon during the sessions.
4. The use of current frameworks to guide the preparation of cooperative materials. By using current frameworks, teachers would be addressing both their concerns for shared materials, and the district's concern for framework implementation.
5. The provision of on-site preparation time for collaborative teams of teachers. This is especially important at the secondary level, because of scheduling.
6. The development of awareness sessions for the community, parents and the boards. This will encourage continued support for current implementers and encourage additional teachers to become involved.
7. The provision of awareness and support sessions for administrators. Information to be provided to parents, timelines for change, and the complexities of cooperative learning should be examined.

8. The provision of refocusing opportunities for teachers who have expressed this stage of concern. A Training of Trainers would not only support their personal growth, it would also support the collaborative nature of staff development and support suggested.

9. The continued support of the change process by provision of staff development personnel. This personnel should be a regularly available person to provide support, guidance and challenges to teachers implementing this very complex instructional strategy. Successful implementation is built upon continued growth and refinement of implementation. Teacher comfort with the levels of implementation supports long term change. In order to move beyond current levels, some cognitive dissonance may need to be generated regarding the range of strategies selected and the effects.

Selected References

Hall, G. E., George, A. A. & Rutherford, W. (1977). Measuring stages of concern about the innovation: a manual for the use of the soc questionnaire. University of Texas.

Johnson, D. W. & Johnson, R. T., (1975). Learning together and alone. Englewood Cliffs, N. J., Prentice-Hall.

Johnson, D. W. & Johnson, R. T. (1985). The internal dynamics of cooperative learning groups, in Slavin, R., Sharan, S., Kagan, S, Lazarowitz, R., Webb, C., & Schmuck, R. Learning to cooperate: cooperating to learn. New York: Plenum Press.

Kagan, S. (1987). Cooperative learning resources for teachers. Riverside: University of California.

Slavin, R. E. (1982). Cooperative learning: student teams. National Education Association of the United States, Washington, D. C.